

REMARKS

Claims 17-20, 26, 29-31, 38 and 40 stand rejected under 35 U.S.C. 102(e) as being anticipated by Ruiter, U.S. Patent No. 6,471,509 B2.

Applicant respectfully traverses the rejection under 35 U.S.C. 102(e). The present application claims priority under 35 U.S.C. 119(a) of the Finish Patent Application No. 19991668, filed on August 4, 1999. In accordance with the U.S.P.T.O.'s revised Examination Guidelines for 35 U.S.C. 102(e): "If a U.S. patent resulted from an international application filed before November 29, 2000, the U.S. patent will have a prior art date per § 102(e) in effect prior to November 29, 2000, which is the earlier of the date of compliance with § 371(c)(1), (2), and (4) of the patent code or the filing date of the later-filed U.S. application that claimed the benefit of the international application". Applying this rule to Ruiter, the 35 U.S.C. 102(e) date of Ruiter is July 6, 2001, which is after applicant's priority date of August 4, 1999, and applicant therefore submits that Ruiter is not available as prior art against the present application.

Claims 17-22, 24, 26-34, and 38-40 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Blomqvist et al, U.S. Patent No. 4,538,986 (hereinafter referred to as Blomqvist).

The present invention, as defined by amended claim 17, is concerned with a support apparatus for supporting material to be treated in a continuously operated thermal treatment furnace. The apparatus comprises an elongate gas control element (designated 5 in the embodiment shown in FIG. 1) having a central axis and first and second guide surfaces, and first and second substantially cylindrical support elements (designated 4). The support elements are of substantially equal diameter D and each has a central axis that is parallel to the central axis of the gas control element (5) and spaced at a distance S from the central axis of the gas control element (5). The central axes of the control element (5) and the support elements (4) are disposed in a common plane. The gas control element (5) is located between the support elements (4) with the first and second guide surfaces of the gas control element (5) facing towards the first and second support elements (4) respectively. The guide surfaces are spaced from the support elements to provide a gas flow channel between each support element (4) and the gas control element (5). The gas

control element (5) includes two lobes that extend to opposite respective sides of the common plane, and each lobe extends radially from the central axis of the gas control element to a distance of at least $(D/2 + S)$. The gas control element is wholly contained between a first plane that is perpendicular to the common plane and intersects the central axis of the first support element and a second plane that is perpendicular to the common plane and intersects the central axis of the second support element.

Blomqvist discloses a means for supporting the material 18 under treatment in continuous-action heat treatment furnaces. The support means consists of a cooled roller 5, on the periphery of which at least two (first and second) cooled rollers 7 with substantially smaller diameter have been placed. The roller 5 is placed outside the furnaces 13, 16 and/or between two consecutive furnaces. The material 18 is supported by one roller 7 at a time, the roller 7 rotating at the speed of movement of the material 18. By turning the roller 5, the mutual positioning of the rollers 7 can be changed. The shape of the roller 5 is advantageously chosen such that when the supporting means is positioned at the opening of a furnace "the openings of the furnace[s] can be sealed in the most perfect manner, considering the circumstances". (column 1, lines 50-51)

Applicant respectfully notes that there is a clear distinction between the present invention, as defined by amended claim 17, and the disclosure of Blomqvist.

The support element of claim 17 is claimed to be wholly contained between a first plane that is perpendicular to the common plane and intersects the central axis of the first support element and a second plane that is perpendicular to the common plane and intersects the central axis of the second support element. This feature allows air to flow as freely as possible from one side of the common plane to the opposite side of the common plane below the material being supported (see FIG. 2).

Conversely, Blomqvist discloses that an express purpose of the support means is to retard heat loss through the opening of the furnace in which the support means is placed and therefore the shape of the roller 5 of Blomqvist is advantageously chosen to provide a sealing effect at the furnace opening. This is accomplished by virtue of the roller 7 being accommodated in a cylindrical recess in the

roller 5, such that the roller 5 almost completely surrounds the roller 7 and restricts the flow of gas through the space between rollers 5 and 7. Applicant submits that a person of ordinary skill in the art would not find it obvious to modify the roller 5 of Blomqvist to be wholly contained between a first plane and a second plane wherein the central axes of the roller 5 and the (first and second) rollers 7 are disposed in a common plane, the first plane being perpendicular to the common plane and intersecting the central axis of the (first) roller 7 and the second plane being perpendicular to the common plane and intersecting the central axis of the (second) roller 7. Such a modification would not provide an adequate seal on the opening 14 of the furnace 13.

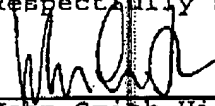
Therefore applicant submits that claim 17 is patentable over Blomqvist and that dependent claims 18-28 are therefore also patentable. Applicant further submits that the above arguments apply equally to amended claim 29 and therefore that claim 29 is patentable over Blomqvist and that dependent claims 30-40 are also patentable.

The present invention, as defined by dependent claim 19, relates to the apparatus defined in claim 17 with the additional limitation that the distance between the center of curvature of the first guide surface of the gas control element (5) and the central axis of the gas control element (5) is greater than the distance between the central axis of the first support element (4) and the central axis of the gas control element (5). Thus, the first guide surface of the gas control element is not concentric with the first support element.

Blomqvist discloses a larger cooled roller 5 supporting a smaller cooled roller 7 and having a cylindrical surface that confronts the smaller cooled roller 7. The surface of the larger cooled roller 5 that confronts the smaller cooled roller 7 is concentric with the smaller cooled roller 7. Applicant submits that it would not have been obvious to a person of ordinary skill in the art to modify the roller 5 of Blomqvist so that the surface that confronts the roller 7 is not concentric with the roller 7. Claim 19 is therefore patentable over Blomqvist independently of the patentability of claim 17. Applicant further submits that the above argument applies equally to dependent

claim 31 and that therefore claim 31 is patentable over Blomqvist independently of claim 29.

Respectfully submitted,




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